



NEWS RELEASE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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NASA ANNOUNCES SPACECRAFT DECONTAMINATION PROCEDURES

The National Aeronautics and Space Administration has announced procedures for the sterilization of planetary spacecraft and revised the procedures for the decontamination of unmanned lunar landers.

NASA's policy continues to be that under no circumstances will an unmanned spacecraft destined for landing on the planets be launched until sterility has been assured.

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The following procedures will insure the prevention of the biological contamination of the planets by NASA spacecraft until sufficient information has been obtained from unmanned missions to assure that biological studies will not be jeopardized:

Planetary Landers: It is the NASA goal to achieve terminal sterilization of a complete capsule by heat. Present techniques require that components to be landed on or enter into the atmosphere of the planets be assembled under clean room conditions and the complete spacecraft subjected to dry heat using a temperature-time cycle that has been proven to render it sterile. The assembly will then be encased in a gas tight enclosure to maintain sterility. Following these procedures the enclosure will not be opened.

Recognizing that many of the state of the art components used in today's spacecraft would be degraded by heat requirements, a program is underway to develop components that will be able to withstand the high temperatures required. If, after exhaustive development to obtain heat resistant components, some critical subassemblies

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still cannot tolerate the heat sterilization, it may be necessary to sterilize them by other methods and then incorporate them into the already sterilized spacecraft by sterile assembly techniques.

Several assemblies will be procured and sterilized so that in the case of malfunction during final checkout a spare can be substituted. Thus, pre-launch procedures will be simplified and risks of missing infrequent launch windows for the planets will be reduced.

Precautions in launches of unsterile planetary flyby spacecraft will be taken to prevent accidental impacting and contamination of a planet.

Lunar Landers: Decontamination procedures for Ranger and Surveyor lunar spacecraft call for clean room assembly, use of sporicidal agents to reduce the number of microbes on exposed surfaces and handling methods to minimize contamination prior to launch.

These procedures are less rigorous than those for the planetary landers and reflect the thesis generally agreed to

by the scientific community that the moon possesses an environment hostile to Earth organisms so they could not propagate on the lunar surface.

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Within NASA's Office of Space Sciences, charged with the administration of these procedures, responsibility has been divided between the Bioscience and Lunar and Planetary Programs.

Methods of testing for sterility are being improved and a microbiological monitoring system is being established by the Bioscience Programs Office. To assist in the development of these programs and to insure the validity of the microbiological safeguards imposed on the planetary landers, the U.S. Public Health Service has detailed one of its officers, Lawrence B. Hall, to duty with NASA as a Special Assistant for Planetary Quarantine.

The Lunar and Planetary Programs Office is ensuring engineering, fabrication and launch techniques will meet the sterilization requirements. While the immediate objective of this office is to have "sterilizable" components for the capsules to be launched to Mars during

the 1966 opportunity, efforts are being initiated to develop a full complement of sterilizable parts--parts to withstand the high temperature requirements--needed for later missions when entire spacecraft may be landed. Studies are also being initiated to discover less destructive methods of sterilization.

A working group, chaired by James R. Miles of Lunar and Planetary Programs, has been set up to advise in this effort. The group is composed of 14 technical specialists from the Ames, Goddard and Marshall Centers of NASA, Jet Propulsion Laboratory and the Biosciences and Reliability Offices of NASA Headquarters.

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A paper summarizing NASA's past efforts on decontamination and sterilization of spacecraft is attached.

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